REMARKS

Claims 1-34 were presented for examination and all claims were rejected. In the current amendment, claims 1-10, 16-20 and 22-26 have been amended. No new matter has been introduced. Upon entry of the current amendment, claims 1-34 will be pending, of which claims 1 and 26 are independent. Applicants submit that claims 1-34 are patentable and in condition for allowance.

The following comments address all stated grounds of rejection. Applicants respectfully traverse all rejections and urge the Examiner to pass the claims to allowance in view of the remarks set forth below.

CLAIM REJECTIONS UNDER 35 U.S.C. §112

I.   Claims 1-34 Rejected Under 35 U.S.C. §112, First Paragraph

Claims 1-34 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner contended that the limitation "responsive to the application isolation layer and the user isolation layer forming the isolation environment in which the process executes" was not adequately described in the specification. It is unclear as to which part of the phrase the Examiner is referring to: that a rule is selected responsive to the application isolation layer and user isolation layer, or that an isolation environment comprises an application isolation layer and a user isolation layer. Nonetheless, Applicants traverse this rejection. For the former part of the phrase, Applicants respectfully direct the Examiner to paragraphs 83 and 97-101 of the present disclosure, which describes selection of an applicable rule and the rule associated with an isolation scope provided by an isolation layer. For the latter part of the phrase, Applicants respectfully direct the Examiner to paragraphs 61-68 of the present disclosure, which describe an isolation environment as comprising an application isolation layer and a user isolation layer. Applicants contend that both of these phrases are adequately described in the specification such that one skilled in the art would reasonably understand that Applicants had possession of the claimed invention. Accordingly, Applicants respectfully request the Examiner to withdraw the rejection of claims 1-34 under 35 U.S.C. §112, first paragraph.

II.   <u>Claims 1-34 Rejected Under 35 U.S.C. §112, Second Paragraph</u>

Claims 1-34 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

A. <u>Antecedent Basis</u>

Applicants hereby amend claims 1 and 26 and respectfully submit that the rejections in section 8(a) of the Office Action are overcome by these amendments. Furthermore, the Examiner objected to the term "the group" as lacking antecedent basis in claim 5. Applicants assume that the Examiner is referring to either claim 2 or claim 6, as this term does not appear in claim 5. Nonetheless, Applicants respectfully direct the Examiner to the Manual of Patent Examining Procedure ("MPEP") §2173.05(h), which explains Markush groups, which recite members as being "selected from <u>the group</u> consisting of A, B and C." (MPEP §2173.05(h), *citing to* <u>Ex parte Markush</u>, 1925 C.D. 126 (Comm'r Pat. 1925). "The group" is defined in each of claims 2 and 6 as consisting of the listed elements. Thus, Applicants submit that these limitations are properly claimed as a Markush group, and do not lack antecedent basis.

B. <u>Indefiniteness</u>

Applicants hereby amend claims 1-10, 16-20 and 22-26 and respectfully submit that the rejections in section 8(b)(i-iii) of the Office Action are overcome by these amendments. Furthermore, the Examiner contended that it was not clearly understood what was meant by "forming a literal name… in response to the [selected] rule" in claims 1 and 26. Applicants respectfully direct the Examiner to Figure 12 and accompanying paragraphs 275-285 of the present disclosure, which describe forming a literal name for a requested system object in response to a selected rule.

The Examiner further rejected claims 27-32 in section 8(b)(v-vi) of the Office Action, claiming that it was unclear if the limitations "a request" and "a system object" were the same as those of claim 26, lines 3 and 4. Claim 26 recites "computer-readable program means for receiving a request to access a system object". This recited means performs functions, as recited in claims 27-32. Accordingly, the limitations of claims 27-32 are functional limitations, while the limitations of claim 26 are structural limitations. Thus, it would be clear to one skilled in the

art that the functional limitations "a request" and "a system object" of claims 27-32 are distinct from the structural limitations recited in claim 26.

For at least the above discussed reasons, Applicants submit that claims 1-34, as amended, comply with the requirements of 35 U.S.C. §112, second paragraph. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of claims 1-34 under 35 U.S.C. §112, second paragraph.

CLAIM REJECTIONS UNDER 35 U.S.C. §101

III.   Claims 26-34 Rejected Under 35 U.S.C. §101

Claims 26-34 were rejected under 35 U.S.C. §101 as directed towards non-statutory subject matter. Claims 26 is an independent claim. Claims 27-34 depend on and incorporate all of the patentable subject matter of independent claim 26. Applicants traverse this rejection and submit that claims 26-34 are directed to statutory subject matter.

Under the "machine-or-transformation" test of In Re Bilski, claimed subject matter is patentable under 35 U.S.C. §101 if "(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing." 545 F.3d 943, 954 (CAFC, 2008). Claim 26 recites an apparatus comprising computer-readable program means for receiving a request; computer-readable program means for forming a literal name; and computer-readable program means for requesting access. These means-plus-function limitations include corresponding structure defined in the specification. Such an apparatus having these means is a particular machine and is thus statutory subject matter (see MPEP 2106.01, citing to In Re Warmerdam, 33 F.3d 1354, 1360-1361 (Fed. Cir. 1994)).

For at least the above discussed reasons, Applicants submit that the subject matter of claim 26 and dependent claims 27-34 are directed to statutory subject matter. Accordingly, Applicants request the Examiner to reconsider and withdraw the rejection of claims 26-34 under 35 U.S.C. §101.

CLAIM REJECTIONS UNDER 35 U.S.C. §102

IV.   Claim 26 Rejected under 35 USC §102

Claim 26 was rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 7,203,941 to Demsey et al. ("Demsey"). Claim 26 is an independent claim, amended herein. Applicants traverse this rejection and submit that Demsey fails to disclose each and every element of claim 26, as amended.

A. Claim 26 Not Anticipated by Demsey

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Claim 26 is directed towards an apparatus comprising means for virtualizing access to system objects. This claim recites:

(i) a process executing in a context of an isolation environment, the isolation environment comprising an application isolation layer and a <u>user isolation layer;</u>

(ii) the process requesting access to a system object, the request including a <u>virtual name</u> for the system object; and

(iii) means for <u>forming a literal name</u> for the system object.

Demsey fails to teach or suggest (i) a process executing in the context of an isolation environment which comprises an application isolation layer and <u>a user isolation layer</u>. The Examiner cites Demsey's applications 102 as a user isolation layer. While Demsey's applications 102 run in "user code", this is not a user isolation layer, as Demsey only has a single user. Demsey's distinction is between system code and user code, the latter being .exe files "executed <u>by the user of the computer environment</u> to run the application, and therefore [causing] the application perform as desired <u>by the user</u>." (see Demsey, col. 10, lines 45-48, emphasis added). In fact, Demsey is silent regarding multiple users or isolation of one user from another. Thus, Demsey is also silent regarding a user isolation layer that provides a user isolation scope, or a <u>user-specific</u> view of system resources (see specification, para. 61).

Demsey also fails to teach or suggest (ii) the process requesting access to a system object, in which the request includes a <u>virtual name</u> for the system object. Demsey merely describes a tracking system for system resource handles for the purpose of reallocating resources to

applications and performing garbage collection routines. The Examiner notes that Demsey describes an application executing in a virtual machine requesting access to a native resource (see Demsey, col. 7, lines 17-25). However, Demsey is silent regarding the request including a virtual name for the system object. In fact, Demsey's applications request access directly to system objects. All of Demsey's applications can see the native resources directly; thus, Demsey does not use a virtual name for the system object in a request.

Finally, Demsey fails to teach or suggest (iii) forming a literal name for the system object. As discussed above, Demsey's applications request access directly to system objects. Accordingly, Demsey does not need to form a literal name for the object, because Demsey does not need to translate a virtual name for the object. Furthermore, as discussed above, Demsey is silent regarding isolating applications and users from each other. Even assuming for the sake of argument that Demsey's managed code is an application isolation layer and user code is a user isolation layer, all applications would share the same isolation layers. Thus, if Demsey were to form a literal name for a requested object, responsive to the application isolation layer and the user isolation layer forming the isolation environment in which the requesting application executes, the literal name formed would be the same, regardless of the requesting application. Thus, Demsey's applications and users would still not be isolated from each other, as all applications would access the same object, regardless of application or user.

For at least the above discussed reasons, Demsey fails to disclose each and every element of claim 26. Therefore, Applicants submit that claim 26 is patentable and in condition for allowance. Accordingly, Applicants respectfully request the Examiner to withdraw the rejection of claim 26 under 35 U.S.C. §102.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

V.   Claims 1-25, 27-34 Rejected under 35 USC §103(a)

Claims 1-25 and 27-34 were rejected as unpatentable over Demsey in view of U.S. Patent Application Publication No. 2003/0233544 to Erlingsson ("Erlingsson"). Claims 2-25 depend on and incorporate all of the patentable subject matter of independent claim 1. Claims 27-34 depend on and incorporate all of the patentable subject matter of independent claim 26. Applicants traverse these rejections and submit that Demsey and Erlingsson, alone or in combination, fail to teach or suggest each and every feature of the claimed invention.

A.   Independent Claim 1 Patentable over Demsey in view of Erlingsson

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. Claim 1 is directed towards a method for virtualizing access to system objects for processes executing in the context of an isolation environment, the isolation environment comprising an application isolation layer and a user isolation layer. The process requests access to a system object, and the request includes a virtual name for the system object. A rule is selected, responsive to the application isolation layer and the user isolation layer forming the isolation environment. Based on the selected rule, a literal name for the system object is formed and the request for access is issued to the operating system, now with the literal name instead of the virtual name for the system object. Demsey and Erlingsson, alone or in combination, fail to teach or suggest each and every element of the claimed invention.

As discussed above, Demsey fails to teach or suggest:

(i) a process executing in a context of an isolation environment, the isolation environment comprising an application isolation layer and a <u>user isolation layer</u>;

(ii) the process requesting access to a system object, the request including a <u>virtual name</u> for the system object; and

(iii) <u>forming a literal name</u> for the system object.

Erlingsson also fails to teach or suggest these elements. Furthermore, although the Examiner cites Erlingsson for describing "selecting a rule associated with a request," Erlingsson does not teach or suggest the selection being "responsive to the application isolation layer and the user isolation layer forming the isolation environment in which the process executes." Rather, Erlingsson creates derived user accounts (DUAs), which are user accounts associated with an original user account (OUA). Erlingsson's derivation rules are "a set of rules that link any aspect of a DUA with the corresponding aspect of its OUA." (Erlingsson, col. 6, lines 46-47). Erlingsson shows an exemplary set of derivation rules ("DUA Table", Erlingsson, col. 7). These rules are specific to a DUA and show how a request for a resource is redirected to a different resource, depending on the derivation rules. Thus, rather than a rule being selected responsive to the application isolation layer and the user isolation layer forming the isolation

environment in which the process executes, Erlingsson's derivation rule is merely selected responsive to the user account of the process.

Furthermore, Erlingsson fails to teach or suggest (i) a process executing in a context of an isolation environment, comprising an application isolation layer and a user isolation layer. Although Erlingsson describes a multi-user system (derived user accounts are legitimate user accounts, distinct from the original user accounts), there is no user isolation layer. Rather than seeing a user isolation scope, or a user-specific view of native resources provided by a user isolation layer, Erlingssons user accounts all see the same resources, with access controlled merely by access privileges, permissions, and rights granted to each user (*Id.*, col. 4, lines 19-25). Thus, all user accounts can see the same resources.

Erlingsson also fails to teach or suggest (ii) a process requesting access to a system object, the request including a <u>virtual name</u> for the object or (iii) forming a <u>literal name</u> for the object. In Erlingsson, applications request access to a resource directly by a literal name. Depending on transformation rules, Erlinggson may transform the request to request access to a *different* resource via a different literal name (*Id.*, col. 7, lines 41-59). However, this is not the same as the request including a virtual name for an object, and forming a literal name for the object in response to a rule determined based on the application isolation layer and user isolation layer in which the requesting process executes. Thus, Erlingsson also fails to teach or suggest these elements of the claimed invention.

Because Demsey and Erlingsson, alone or in combination, fail to teach or suggest each and every element of the claimed invention, Applicants submit that independent claim 1 is patentable and in condition for allowance. Therefore, Applicants request the Examiner to withdraw the rejection of claim 1 under 35 U.S.C. §103.

B.   <u>Dependent Claims 2-25 and 27-34 Patentable over Demsey and Erlinggson</u>

In view of the arguments above in connection with the rejection of independent claims 1 and 26, Applicants submit that independent claims 1 and 26 are patentable and in condition for allowance. Claims 2-25 depend on and incorporate all of the patentable subject matter of independent claim 1. Claims 27-34 depend on and incorporate all of the patentable subject matter of independent claim 26. Thus, Applicants submit that claims 2-25 and 27-34 are also

patentable and in condition for allowance. Therefore, Applicants respectfully request the Examiner to withdraw the rejection of claims 2-25 and 27-34 under 35 U.S.C. §103.

CONCLUSION

In light of the aforementioned amendments and arguments, Applicants contend that each of the Examiner's rejections has been adequately addressed and all of the pending claims are in condition for allowance. Accordingly, Applicants respectfully request reconsideration, withdrawal of all grounds of rejection, and allowance of all of the pending claims.

Should the Examiner feel that a telephone conference with Applicants' attorney would expedite prosecution of this application, the Examiner is urged to contact the Applicants' attorney at the telephone number identified below.

Respectfully submitted,

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